

What is claimed is:

1 1. A method of making a clad self-brazing alloy comprising the steps of
2 providing a base metal alloy, providing a cladding consisting essentially of copper and
3 aluminum, and pressing said cladding to said base metal alloy to bond said cladding
4 to and form a brazing layer on said base metal alloy, said base metal alloy having a
5 melting point higher than said cladding.

1 2. A method of making a clad self-brazing alloy comprising the steps of
2 providing a base metal alloy, providing a cladding consisting essentially of copper and
3 nickel, and pressing said cladding to said base metal alloy to bond said cladding to and
4 from a brazing layer on said base metal alloy, said base metal alloy having a melting
5 point higher than said cladding.

1 3. A method of making a clad self-brazing alloy according to claim 1 or 2,
2 wherein said pressing comprises the step of roll bonding to form a roll bonded
3 composite.

1 4. A method of making a clad self-brazing material according to claim 3, wherein
2 said cladding comprises layers of commercially pure copper and commercially pure
3 aluminum.

1 5. A method of making a clad self-brazing material according to claim 4, wherein
2 the thickness of the copper and aluminum layers are selected to produce a cladding
3 consisting essentially of 2% aluminum to up to 100% aluminum.

1 6. A method of making a clad self-brazing material according to claim 4, wherein
2 the thickness of the copper and aluminum layers are selected to produce a cladding
3 consisting essentially of 2% aluminum to 30% aluminum.

1 7. A method of making a clad self-brazing material according to claim 4, wherein
2 the thickness of the copper and aluminum layers are selected to produce a cladding
3 consisting essentially of 5% aluminum and the balance copper.

1 8. A method of making a clad self-brazing material according to claim 4, wherein
2 the thickness of the copper and aluminum layers are 0.030" and 0.0075", respectively,
3 prior to said roll bonding step.

1 9. A method of making a clad self-brazing material according to claim 4, wherein
2 the thickness of the copper and aluminum layers are 0.030" and 0.012", respectively,
3 prior to said roll bonding step.

1 10. A method of making a clad self-brazing material according to claim 4,
2 wherein said base metal alloy is stainless steel.

1 11. A method of making clad self-brazing material according to claim 4,
2 including the further step of cold rolling said roll bonded composite to a final gauge.

1 12. A method of making a clad self-brazing material according to claim 11,
2 wherein said final gauge is 0.017".

1 13. A method of making a clad self-brazing material according to claim 4,
2 wherein said layers are on each side of said base metal alloy.

1 14. A method of making a clad self-brazing material according to claim 13,
2 wherein copper comprises an outer layer on each side of said composite.

1 15. A method of making a clad self-brazing material according to claim 4,
2 wherein copper comprises an outer layer of said composite.

1 16. A method of making a clad self-brazing material according to claim 15,
2 wherein said base metal comprises another outer layer of said composite.

1 17. A method of making a clad self-brazing material according to claim 16,
2 wherein said base metal is stainless steel.

1 18. A method of making a clad self-brazing material according to claim 3,
2 wherein said cladding comprises layers of commercially pure copper and commercially
3 pure nickel.

1 19. A method of making a clad self-brazing material according to claim 18,
2 wherein the thickness of the copper and nickel layers are selected to produce a
3 cladding consisting essentially of 10% to up to 100% nickel.

1 20. A method of making a clad self-brazing alloy according to claim 18, wherein
2 the thickness of the copper and nickel layers are selected to produce a cladding
3 consisting essentially of 20% to 40% nickel.

1 21. A method of making a clad self-brazing alloy according to claim 18, wherein
2 the thickness of the copper and nickel layers are selected to produce a cladding
3 consisting essentially of 25% nickel and the balance copper.

1 22. A method of making a clad self-brazing material according to claim 18,
2 wherein the thickness of the copper and nickel layers are 0.030" and 0.010",
3 respectively, prior to said roll bonding step.

1 23. A clad self-brazing alloy comprising a base metal alloy sheet having a
2 cladding consisting essentially of layers of commercially pure copper and aluminum
3 metallurgically bonded to each other and to said base metal to form a composite.

1 24. A clad self-brazing alloy according to claim 23, wherein said aluminum
2 comprises 2% to up to 100% of said cladding.

1 25. A clad self-brazing alloy according to claim 23, wherein said aluminum
2 comprises 2% to 30% of said cladding.

1 26. A clad self-brazing alloy according to claim 23, wherein said aluminum
2 comprises 5% of said cladding.

1 27. A clad self-brazing alloy according to claim 23, wherein the thickness of the
2 copper and aluminum layers are 0.030" and 0.0075" respectively.

1 28. A clad self-brazing alloy according to claim 23, wherein the thickness of the
2 copper and aluminum layers are 0.030" and 0.012", respectively.

1 29. A clad self-brazing alloy according to claim 23, wherein said base metal
2 alloy is stainless steel.

1 30. A clad self-brazing alloy according to claim 23, wherein said layers of
2 copper and aluminum and metallurgically bonded to each face of said base metal
3 sheet.

1 31. A clad self-brazing alloy according to claim 30, wherein copper comprises
2 an outer layer on each face of said composite.

1 32. A clad self-brazing alloy according to claim 23, wherein copper comprises
2 an outer layer of said composite.

1 33. A clad self-brazing alloy according to claim 32, wherein said base metal
2 comprises another outer layer of said composite.

1 34. A clad self-brazing alloy according to claim 33, wherein said base metal is
2 stainless steel.

1 35. A clad self-brazing alloy comprising a base metal alloy sheet having a
2 cladding consisting essentially of layers of commercially pure copper and nickel
3 metallurgically bonded to each other and to said base metal to form a composite.

1 36. A clad self-brazing alloy according to claim 35, wherein said nickel
2 comprises 10% to up to 100% nickel.

1 37. A clad self-brazing alloy according to claim 35, wherein said nickel
2 comprises 20% to 40% of said cladding.

1 38. A clad self-brazing alloy according to claim 35, wherein said nickel
2 comprises 25% of said cladding.

1 39. A clad self-brazing alloy according to claim 35, wherein the thickness of the
2 copper and nickel layers are 0.03" and 0.010", respectively.

1 40. A clad self-brazing alloy according to claim 35, wherein said base metal
2 alloy is stainless steel.

1 41. A clad self-brazing alloy according to claim 35, wherein copper comprises
2 an outer layer of said composite.